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10/830,076	04/23/2004	Jae-seong Shim	1793.1214	7669

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EXAMINER	
GUPTA, PARUL H	
ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/830,076	SHIM ET AL.	
	Examiner	Art Unit	
	Parul Gupta	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) *1-10 and 37-44* is/are withdrawn from consideration.

5)☒ Claim(s) *17-20 and 27-31* is/are allowed.

6)☒ Claim(s) *11,12,21-23 and 32* is/are rejected.

7)☒ Claim(s) *13-16,24-26 and 33-36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-44 are pending for examination as interpreted by the examiner. The IDS filed on 4/23/04 and 11/30/05 were considered.

Election/Restrictions

2. Applicant's election with traverse of claims 11-36 in the reply filed on 4/5/07 is acknowledged. The traversal is on the ground(s) that the different classifications for the product and method claims is not conclusive on the question of restriction. This is not found persuasive because the groups relate to subcombinations usable together that are patentably distinct for the reasons of record and examination of all claims would be a serious burden to the examiner, as evidenced by the different classification.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1-10 and 37-44 were withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4/5/07.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 11-16 and 21-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification, while being enabling for lower values of k or n in claims 11 and 21, does not reasonably provide enablement for higher values of k or n. Higher values of k and n that approach infinity result in a frequency that can not be detected, hence requiring undue experimentation. Claims 12-16 and 22-31 are also rejected for the same reason.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 21-31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 recites the limitation "n" in the ratio of 1/n. There is insufficient antecedent basis for this limitation in the claim. The variable n is never defined within the claim. Claims 22-31 are objected to as being dependant on a rejected base claim.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 32 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 32 is drawn to a "program" *per se* or non-tangible signal with "program", per se, or non-tangible computer readable medium (as defined in the specification on page 11, lines 20-21 as being a signal) with "program", per se, as recited in the preamble and as such is non-statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures not claimed as embodied in tangible computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed tangible computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 11, 12, and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagasawa et al., US Patent 5,848,050.

Regarding claim 11, Nagasawa et al. teaches a disc type recording medium for recording information by forming a plurality of disc tracks, the medium comprising: at least two first sections in which the disc tracks are formed using a first function having a first frequency; and at least one second section in which the disc tracks are formed using a second function having a second frequency, which is 1/k times the first frequency, wherein the second section is positioned between the first sections and k is a positive integer. In column 3, lines 23-26, Nagasawa et al. teaches that the frequency of the wobble signal is kept constant. This means that the frequency is the same throughout the disc. Thus, k is equal to 1.

Regarding claim 21, Nagasawa et al. teaches a method of forming disc tracks for recording information, comprising: forming disc tracks using a first function in a plurality of first sections of a disc type recording medium; and forming disc tracks using a second function in a second section of the disc type recording medium, wherein the first function and the second function have frequencies, and the frequency of the second

function is 1/n times the frequency of the first function, and the second section is positioned between the first sections. In column 3, lines 23-26, Nagasawa et al. teaches that the frequency of the wobble signal is kept constant. This means that the frequency is the same throughout the disc. Thus, n is equal to 1.

Regarding claims 12 and 22-23, Nagasawa et al. teaches the medium wherein the first sections are used for a PLL (column 13, lines 39-41) and the first function has a single frequency. In column 3, lines 23-26, Nagasawa et al. teaches that the frequency of the wobble signal is kept constant, meaning that there is only one frequency.

Allowable Subject Matter

7. Claims 17-20 and 27-31 are allowable while claims 13-16, 24-26 and 33-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record, taken alone or in combination teaches the following.

Regarding claims 13-15, 19, 24-25, 30, and 35, none of the references teach the medium wherein the second section is allotted to record address information for disc access and comprises two first sub sections using the second function and a second sub section using a third function having a frequency that is the same as the first frequency, wherein the second sub section is positioned between the first sub sections and the third function has a different phase from a phase of the first function.

Regarding claims 16 and 26, none of the references teach the method, wherein the frequency of the second function is half the frequency of the first function.

Regarding claims 17, 27, and 32, none of the references teach a disc type recording medium, a method, and a computer readable recording medium for recording a program that executes a method for recording information by forming disc tracks, the medium comprising: at least two first sections in which the disc tracks are formed using a first function, the first function having a primary differential value; and at least one second section in which the disc tracks are formed using a second function, the second function having a primary differential value, wherein, the second section is positioned between the first sections, the difference between primary differential values of the first and second function at points where the first sections and the second section meet is less than 50% of the primary differential value of the first function, and the second function used in the second section has a point at which the primary differential value is 0 or does not include discontinuities.

Regarding claims 18, 28-29, and 33-34, Nagasawa et al. teaches the medium wherein the first sections are used for a PLL (column 13, lines 39-41) and the first function has a single frequency. In column 3, lines 23-26, Nagasawa et al. teaches that the frequency of the wobble signal is kept constant, meaning that there is only one frequency.

Regarding claims 20, 31, and 36, none of the references teach the given equation.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Publication 2007/0076548 discloses similar material,

but was filed later. US Patent 6,160,776 discloses similar material with only one frequency. US Patent 6,278,565 includes different sectors of tracks with servo data of different frequencies. US Patent 5,615,192 discloses similar material of different tracks with different frequencies, but does not teach the same sectors of tracks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parul Gupta whose telephone number is 571-272-5260. The examiner can normally be reached on Monday through Thursday, from 9:30 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PHG
6/25/07

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER